EXHIBIT 4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

TUTTLE *et al.*

Appl. No.: 11/396,251

Filed: March 30, 2006

For: **Asynchronous Messaging Using a Node Specialization Architecture in the Dynamic Routing Network**

Confirmation No.: 1129

Art Unit: 2194

Examiner: DAO, TUAN C.

Atty. Docket: 2222.775000E

Brief on Appeal Under 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

A Notice of Appeal from the Final Office Action, dated December 30, 2011, was filed March 28, 2012, along with a Pre Appeal Conference Request and Arguments. The Pre Appeal Brief Conference Decision was mailed May 1, 2012. Appellants hereby file one copy of this Appeal Brief, together with the required fee set forth in 37 C.F.R. § 41.20(b)(2).

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 19-0036.

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I.   Real Party In Interest (37 C.F.R. § 41.37(c)(1)(i))

The real party in interest in this appeal is the Shaw Parsing LLC, having its principal place of business at 2215-B Renaissance Drive, Suite 5, Las Vegas, Nevada, 89119. An Assignment assigning all right, title, and interest in and to the patent application from the inventors to Bang Networks, Inc. was recorded in the Assignment Branch of the United States Patent and Trademark Office on June 21, 2007, at reel 019462, frame 0914. An Assignment assigning all right, title, and interest in and to the patent application from the Bang Networks, Inc. to Shaw Parsing LLC was recorded in the Assignment Branch of the United States Patent and Trademark Office on June 21, 2007, at reel 019462, frame 0936.

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II.   *Related Appeals and Interferences (37 C.F.R. § 41.37(c)(1)(ii))*

To the best of the knowledge of Appellants, Appellants' legal representative, and Appellants' assignee, there are no other appeals, interferences, or judicial proceedings which are related to, directly affect, or are directly affected by or have a bearing on a decision by the Board of Patent Appeals and Interferences ("the Board") in the pending appeal.

Appellants will comply with 37 C.F.R. § 41.8(a) and will notify the Board of any change during the proceeding, within 20 days of the change, in (1) the real party-in-interest, and (2) each judicial or administrative proceeding that could affect, or be affected by, the Board proceeding.

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III.   *Summary of Claimed Subject Matter (37 C.F.R. § 41.37(c)(1)(iii))*

A concise explanation of the subject matter recited in the independent claims on appeal (i.e., claims 26, 33, 39, 45, 51, 57, 63, 64, and 66) is provided below. The explanation refers to the specification by page and line number and to the drawings by reference characters. Reference is made to example supporting embodiments disclosed in the specification, although it is understood that the claims should not be limited to the specific embodiments to which reference is made.

A.   *Independent Claim 26*

Claim Element	Example Support
A method comprising:	FIGs. 7, 8, and 10
receiving, using a processing device, an update message from an input source, the update message identifying a live object and containing data for updating a property of the live object;	FIG. 7, element 724A; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
identifying a category of the update message based on the input source;	FIG. 7, element 724A; FIG. 10, element 1020; page 39, lines 3-7; page 40, lines 3-18; page 47, lines 2-3 [emphasis added for at least one distinguishing feature of the claim]
determining a node having a node type to which the update message is to be routed based on a mapping of categories of update messages to node types, the mapping controlling an amount of update message traffic through nodes of a routing network;	FIG. 7, elements 724A and 726A; FIG. 10, element 1030; page 39, lines 3-7; page 47, lines 3-5
routing, using the processing device, the update message to the node having the determined node type;	FIG. 7, elements 724A and 726A; FIG. 10, element 1040; page 47, lines 3-5
causing the node, through the update message, to determine a client, different from the input source, that has registered for updates of the live object;	FIG. 7, elements 724A, 726A, 712; FIG. 8, element 850; FIG. 10, element 1050; page 38, lines 14-16; page 47, lines 5-9
causing the node to route the update	FIG. 7, elements 724A, 726A, 712; FIG. 8,

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| message from the node to the client; and | element 860; FIG. 10, elements 1060 and 1070; page 38, lines 14-16; page 47, lines 9-12 |
| causing the client to process the update message and to update the property of the live object. | page 16, line 18 – page 17, line 5 |

B.   Independent Claim 33

Claim Element	Example Support
A routing network comprising:	FIG. 3, element 110
a gateway device configured to:	FIG. 7, element 724A
receive an update message from an input source, the update message identifying a live object and containing data for updating a property of the live object,	FIG. 7, element 724A; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
identify a category of the update message based on the input source;	FIG. 7, element 724A; FIG. 10, element 1020; page 39, lines 3-7; page 40, lines 3-18; page 47, lines 2-3 [emphasis added for at least one distinguishing feature of the claim]
determine a node having a node type to which the update message is to be routed based on a mapping of a categories of update messages to node types, the mapping controlling an amount of update message traffic through nodes of a routing network; and	FIG. 7, element 724A; FIG. 10, element 1030; page 39, lines 3-7; page 47, lines 3-5
route the update message; and	FIG. 7, element 724A; FIG. 10, element 1040; page 47, lines 3-5
the node configured to:	FIG. 7, element 726A
receive the update message from the gateway device, wherein the node is configured to be mapped to the node type,	FIG. 7, elements 724A and 726A; FIG. 10, element 1040; page 39, lines 3-7; page 47, lines 3-5
determine a client, different from the input source, that has registered for updates of the live object, and	FIG. 7, elements 724A, 726A, 712; FIG. 8, element 850; FIG. 10, element 1050; page 38, lines 14-16; page 47, lines 5-9
route the update message from the node to the client, wherein the client is adapted to process the update message and to update the property of the live object.	FIG. 7, elements 724A, 726A, 712; FIG. 8, element 860; FIG. 10, elements 1060 and 1070; page 16, line 18 – page 17, line 5; page 38, lines 14-16; page 47, lines 9-12

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C.   *Independent Claim 39*

Claim Element	*Example Support*
A method comprising:	FIGs. 7, 8, and 10
providing, using a processing device of an input source, a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object recognizable by the client device, and causing the client device to respond to the live object of the data representation by determining an object ID of the live object and to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to a node in the routing network; and	FIG. 3, element 210; FIG. 7, element 710; page 11, lines 3-19
sending, using the processing device of the input source, an update message to the routing network, wherein the update message identifies the live object and contains update data that updates a property of the live object,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein a gateway device at the routing network is configured to ***identify a category of the update message based on the input source***, to determine a node type to which the identified category maps, and to route the update message to the node, having the node type, at the routing network,	FIG. 7, element 724A; FIG. 8, element 810; FIG. 10, elements 1010, 1020, and 1030; page 6, lines 2-10; page 38, lines 10-11; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-5 [emphasis added for at least one distinguishing feature of the claim]
wherein the node is configured to identify the client device as a registered device and to route the update message to the client device, and	FIG. 7, elements 724A, 726A, 712; FIG. 8, elements 850 and 860; FIG. 10, elements 1050, 1060, and 1070; page 38, lines 14-16; page 47, lines 5-12
wherein the client device processes the update message upon receipt to update the property of the live object at the client device.	page 16, line 18 – page 17, line 5

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D.   Independent Claim 45

Claim Element	Example Support
An apparatus comprising:	FIGs. 3 and 7
an input source device configured to provide a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object that is recognizable by the client device, and that causes the client device to determine an object ID of the live object to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to the routing network,	FIG. 3, element 210; FIG. 7, element 710; page 11, lines 3-19
wherein the input source device is configured to route an update message to the routing network, wherein the update message identifies the live object and contains update data for updating a property of the live object,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein a gateway device at the network is configured to ***identify a category of the update message based on the input source***, to determine a node type to which the identified category maps, and to route the update message to a node of the node type at the routing network,	FIG. 7, element 724A; FIG. 8, element 810; FIG. 10, elements 1010, 1020, and 1030; page 6, lines 2-10; page 38, lines 10-11; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-5 [emphasis added for at least one distinguishing feature of the claim]
wherein the node is configured to identify the client device as a registered device and route the update message containing the update data to the client device, and	FIG. 7, elements 724A, 726A, 712; FIG. 8, elements 850 and 860; FIG. 10, elements 1050, 1060, and 1070; page 38, lines 14-16; page 47, lines 5-12
wherein the client device is configured to process the update message upon receipt to update the property of the live object at the client device.	page 16, line 18 – page 17, line 5

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E.   *Independent Claim 51*

Claim Element	Example Support
An article of manufacture including a computer-readable storage medium having instructions stored thereon, execution of which by a computing device causes the computing device to perform operations comprising:	FIGs. 7, 8, and 10; page 12, line 20 – page 13, line 11; page 20, line 14-18; page 21, line 13 – page 22, line 15
providing, using a processing device of an input source, a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object that is recognizable by the client device, and that causes the client device to respond to the live object by determining an object ID of the live object to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to the routing network; and	FIG. 3, element 210; FIG. 7, element 710; page 11, lines 3-19
sending, using the processing device of the input source, an update message to the routing network, wherein the update message identifies the live object and contains update data for updating a property of the live object,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein a gateway device at the routing network is configured to **identify a category of the update message based on the input source,** to determine a node type to which the identified category maps, and to route the update message to a node of the node type at the routing network,	FIG. 7, element 724A; FIG. 8, element 810; FIG. 10, elements 1010, 1020, and 1030; page 6, lines 2-10; page 38, lines 10-11; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-5 [emphasis added for at least one distinguishing feature of the claim]
wherein the node is configured to identify the client device as a registered device and to route the update message to the client device, and	FIG. 7, elements 724A, 726A, 712; FIG. 8, elements 850 and 860; FIG. 10, elements 1050, 1060, and 1070; page 38, lines 14-16; page 47, lines 5-12
wherein the client device is configured to process the update message upon receipt to update the property of the live object at the client device.	page 16, line 18 – page 17, line 5

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F.   Independent Claim 57

Claim Element	Example Support
A non-transitory computer readable storage medium having instructions stored thereon, the instructions comprising:	FIGs. 7, 8, and 10; page 12, line 20 – page 13, line 11; page 20, line 14-18; page 21, line 13 – page 22, line 15
instructions for providing a data representation to a client device coupled to a routing network, wherein the data representation includes at least one live object recognizable by the client device, and wherein the client device is configured to respond to the live object of the data representation by determining an object ID of the live object to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to the routing network; and	FIG. 3, element 210; FIG. 7, element 710; page 11, lines 3-19
instructions for providing, using a processing device of an input source, different from the client device, an update message to the routing network, wherein the update message identifies the live object and contains update data for updating a property of the live object,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein a gateway device at the routing network is configured to *identify a category of the update message based on the input source*, to determine a node type to which the identified category maps, and to route the update message to a node of the node type at the routing network,	FIG. 7, element 724A; FIG. 8, element 810; FIG. 10, elements 1010, 1020, and 1030; page 6, lines 2-10; page 38, lines 10-11; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-5 [emphasis added for at least one distinguishing feature of the claim]
wherein the node is configured to identify the client device as a registered device and to route the update message containing the update data to the client device, and	FIG. 7, elements 724A, 726A, 712; FIG. 8, elements 850 and 860; FIG. 10, elements 1050, 1060, and 1070; page 38, lines 14-16; page 47, lines 5-12
wherein the client device is configured to process the update message upon receipt to update the property of the live object at the client device.	page 16, line 18 – page 17, line 5

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G.   Independent Claim 63

Claim Element	Example Support
A method comprising:	FIGs. 7, 8, and 10
providing a live object to a client device;	page 11, lines 3-19
sending, using a processing device of an input source, different from the client device, an update message to a routing network identifying the live object and containing update data to update the live object at the client device,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein in response to determining that the client device is registered to receive update data for the live object, causing *a category of the update message to be identified based on the input source*, a node type associated with the category be determined, and the update message be routed from the gateway device to a node having the node type at the routing network, and causing the node to route the update message to the client device.	FIG. 7, elements 724A, 726A, 712; FIG. 8, element 810, 850, and 860; FIG. 10, elements 1010, 1020, 1030, 1050, 1060, and 1070; page 6, lines 2-10; page 38, lines 10-16; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-12 [emphasis added for at least one distinguishing feature of the claim]

H.   Independent Claim 64

Claim Element	Example Support
An apparatus comprising:	FIGs. 3 and 7
an input source arranged to provide a live object to a client device, different from the input source; and	FIG. 3, element 210; FIG. 7, element 710; page 11, lines 3-19
the input source arranged to provide an update message to a routing network identifying the live object and containing update data for updating the live object,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein the routing network is configured to *identify a category of the update message based on the input source,* determine a node type associated with the category, and to route the update message from a gateway device at the routing network to a node having the node type at the routing network, and wherein the node is configured to route the update message to the client device if the client device is registered to receive	FIG. 7, elements 724A, 726A, 712; FIG. 8, element 810, 850, and 860; FIG. 10, elements 1010, 1020, 1030, 1050, 1060, and 1070; page 6, lines 2-10; page 38, lines 10-16; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-12 [emphasis added for at least one distinguishing feature of the claim]

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the update data for the live object.	

I.   Independent Claim 66

Claim Element	*Example Support*
A non-transitory computer readable storage medium having instructions stored thereon, the instructions comprising:	FIGs. 7, 8, and 10; page 12, line 20 – page 13, line 11; page 20, line 14-18; page 21, line 13 – page 22, line 15
instructions for providing a live object to a client device; and	page 11, lines 3-19
instructions for providing an update message from an input source, different from the client device, to a routing network identifying the live object and containing update data for updating the live object at the client device,	FIG. 3, element 210; FIG. 7, element 710; FIG. 8, element 810; FIG. 10, element 1010; page 6, lines 2-10; page 38, lines 10-11; page 46, line 20 – page 47, line 1
wherein *a category of the update message is identified based on the input source*, a node type associated with the category is determined, and the update message is routed from a gateway device at the routing network to a node having the node type at the routing network, wherein the update message is routed from the node to the client device in response to a determination that the client device is registered to receive the update data for the live object.	FIG. 7, elements 724A, 726A, 712; FIG. 8, element 810, 850, and 860; FIG. 10, elements 1010, 1020, 1030, 1050, 1060, and 1070; page 6, lines 2-10; page 38, lines 10-16; page 39, lines 3-7; page 40, lines 3-18; page 46, line 20 – page 47, lines 1-12 [emphasis added for at least one distinguishing feature of the claim]

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IV.   *Argument (37 C.F.R. § 41.37(c)(1)(iv))*

A.   *The Office committed reversible errors as the references lack at least the claimed identifying based on input source and rather Chandra teaches using a category/topic of message content*

Appellants demonstrate Chandra, Stocker, Trenbeath, Campbell and Freeman do not teach or suggest at least the claimed identifying a category of the update message based on the input source *or* an updated message is identified based on the input source. Rather, the reference relied upon by the Office, Chandra, merely teaches using a category/topic of message content. Thus, as the claims are allowable over the references, the Office should be reversed and the claims passed to issue.

B.   *Chandra, Stocker, and Trenbeath do not teach or suggest at least identifying a category of the update message based on the input source as respectively recited in claims 26, 33, 39, 45, 51, and 57*

The Examiner maintained the rejection of claims 26, 28, 33, 34, 39, 42-45, 48-51, 54-57, 60-62, 67, and 68 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chandra in view of Stocker, and further in view of Trenbeath. (Final Office Action mailed December 30, 2011 ("Final Office Action"), pp. 2-30; Advisory Action mailed February 28, 2012 ("Advisory Action"), pp. 2.)

Independent claims 26, 33, 39, 45, 51, and 57 recite a combination of features not taught or suggested by the applied references.

For example, independent claim 26 recites, *inter alia*, (emphasis added):

> *identifying a category of the update message **based on the input source**.*

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Independent claim 33 recites similar distinguishing features, using its respective language. Further, independent claim 39 recites, *inter alia*, (emphasis added):

> wherein a gateway device at the routing network is configured to ***identify a category of the update message based on the input source***, to determine a node type to which the identified category maps, and to route the update message to the node, having the node type, at the routing network.

Independent claims 45, 51, and 57 recite similar distinguishing features, using their respective language.

The combination of Chandra, Stocker, and Trenbeath does not teach or suggest at least the above-noted distinguishing features, and the Examiner's rejection based on 35 U.S.C. § 103(a) is therefore improper as being legally and factually deficient.

The Examiner relies on Chandra for this claim feature. (Final Office Action, p. 3 citing Chandra 1:25-35 and 5:45-65 (in view of paragraphs 103 and 105 of the specification of instant application).) Appellants disagree. Rather than teaching or suggesting at least "identify a category of the update message ***based on the input source,***" as respectfully recited in claims, Chandra teaches identifying categories ***based on category/topic of the message content***.

Chandra discloses a method for "routing messages within a network using the data content of the message." (Chandra, Title.) When discussing the background art, Chandra discloses that (emphasis added):

> One example of a system that includes such a network environment is a publish/subscribe system. In publish/subscribe systems, publishers post messages and ***subscribers independently specify categories of events in which they are interested.*** The

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system takes the posted messages and includes in each message header the destination information of those subscribers indicating interest in the particular message. The system then uses the destination information in the message to forward the message through the network to the appropriate subscribers.

(Chandra, 1:26-35.)

Chandra also discusses the content based subscription, where "one or more of the clients can specify a subscription. Each subscription provides a set of conditions indicating the types of messages those clients are interested in receiving."   (Chandra, 5:45-48.) Chandra further discloses that:

> Consider an example in which messages are related to the stock market. In such an example, a subscription may have the following three fields (or attributes): stock issue, stock price and stock value. The client specifies values for these fields, e.g., IBM, 100, 200, and then, these fields are used to determine if the client is interested in a particular message. *If the data content of the message matches the specified values of the subscription, then the message is delivered to the one or more subscribers (or clients) of that subscription.* It will be apparent to those skilled in the art that the use of three fields in the subscription is only one example. Subscriptions may include any number of desired fields and tests may include relationships other than equality. Further, the stock market scenario is only one example. Messages and subscriptions can be used for any type of data or events.

(Chandra, 5:53-67; emphasis added.)

These sections of Chandra, relied on by the Examiner, merely disclose that subscribers can specify categories of events in which they are interested and if the *data content of the message* matches the specified values of the subscription, then the message is delivered to the one or more subscribers (or clients) of that subscription.   This is not the same as "identif[ying] a category of the update message *based on the input source,*" as recited in claims 26, 33, 39, 45, 51, and 57, using their respective language.

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The Examiner also states:

> Chandra column 1:25-35; column 5:45-65 discloses "publisher post messages and subscribers independently specify categories or [sic] event [sic] in which they are interested" and :if the data content of the message matches the specified value of the subscription, then the message is delivered [to] the one or more subscribers (or clients)" → *identifying each category based on the category/topic of the message content*);

(Final Office Action, p. 3; emphasis added.) This proves the Examiner agrees that Chandra teaches identifying categories *based on category/topic of the message content*. In contrast, claims 26, 33, 39, 45, 51, and 57 recite, *inter* alia, "identify a category of the update message *based on the input source,*" using their respective language.

Appellant rebutted the Examiner stating:

> The Examiner, for example, on page 3 of the Office Action, relies on the above sections of Chandra [Chandra, 1:25-35 and 5:45-65] to allegedly show "identifying each category based on the category/topic of the message content." By this statement, the Examiner appears to agree that Chandra teaches identifying categories **based on category/topic of the message content**. In contrast, claims 26, 33, 39, 45, 51, and 57 recite, *inter* alia, "identify a category of the update message **based on the input source,**" using their respective language.

(Reply under 37 C.F.R. 1.116 filed February 9, 2012 ("After Final Response"), pp. 18-19)

The Examiner then responded:

> More specifically, in Chandra, a publish/subscriber system and publisher is equivalent as input source and a specific publisher publishes/posts messages related to "sport", "weather", and "stocks". A particular subscriber selects category "stocks" (which he/she is interested" [sic] is equivalent identifying a category "stocks" of update messages based on available categories ("sport", "weather", and "stock") of the publisher/input source. Put another way, if said specific publisher only

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> publishes/posts messages related to "sports", "weather", "celebrities", then the particular subscriber cannot identify the category "stocks" (which he/she is interested) and should subscribes [sic] for another publisher based on available categories of the another publisher. Accordingly, Chandra indeed fully discloses identifying a category of the update message based [sic] a plurality of available categories of the input source.

(Advisory Action, p. 2.) Appellants respectfully disagree.

First, the Examiner states that "if said specific publisher only publishes/posts messages related to 'sports', 'weather', 'celebrities', then the ***particular subscriber cannot identify the category 'stocks' (which he/she is interested)***." (Advisory Action, p. 2, emphasis added.) Appellants respectfully disagree. Chandra specifically discloses that subscriptions are based on the ***type of messages those clients are interested*** in receiving (Chandra, 5:46-48.) Therefore, following the Examiner's example, if the particular subscriber is interested in "stocks" type of messages, Chandra discloses that the particular subscriber will subscribe to "stocks" type of messages no matter what a specific publisher publishes. Therefore, the Examiner's statement that "particular subscriber ***cannot identify*** the category 'stocks' (which he/she is interested)" because the specific publisher only publishes/posts messages related to "sports," "weather," and "celebrities" (Advisory Action, p. 2, emphasis added) is not correct.

Second, the Examiner states that "if said specific publisher only publishes/posts messages related to 'sports', 'weather', 'celebrities', then the particular subscriber cannot identify the category 'stocks' (which he/she is interested) and ***should subscribes [sic] for another publisher based on available categories of the another publisher.***" (Advisory Action, p. 2, emphasis added.) Appellants respectfully disagree. Chandra specifically states

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that "[e]ach subscription provides a set of conditions indicating the *type of messages those clients are interested* in receiving." (Chandra, 5:46-48, emphasis added.) Therefore, Chandra discloses that subscriptions are based on *type of messages* that clients are interested in, and not based on available categories of *another publisher*, as the Examiner suggests.

Moreover, following the Examiner's example, if a particular subscriber selects a category of "stocks", the particular subscriber is subscribed to "stocks" type of messages. Chandra determines whether a data content of a message matches the specified values of the subscription (such as "stock"), then the message is delivered to the particular subscriber. Chandra does not identify messages based on the publisher, which the Examiner analogizes as input source of independent claims, to which Applicants do not concede.

Therefore, Chandra, the only reference relied upon by the Examiner, does not teach or suggest "identifying a category of the update message based on the input source" *or* "an updated message is identified based on the input source," as respectively claimed in claims 26, 33, 39, 45, 51, and 57, but rather Chandra teaches identifying categories based on category/topic of the message content. The Examiner does not rely on Stocker, Trenbeath, Campbell, and Freeman to disclose at least this distinguishing feature, nor do these references teach or suggest at least the above noted distinguishing feature.

With regards to Stocker, the Examiner alleges Stocker teaches "GIMR 300 determining a message control node 210 to send a general information message 220 to MSS 110," "if the cell serving mobile station in part of the served area 195, the step 430 is entered," "determining if the served area ... associated with the MS 100," "routing the update message to the node having determined node type," and "sending general message

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invocation ... to determined message control nod." (Final Office Action, pp. 4-5.) However, the Examiner does not use Stocker to disclose, nor does it teach or suggest, at least the above-noted distinguishing features of claims 26, 33, 39, 45, 51, and 57. Therefore, Stocker does not cure the deficiencies of Chandra.

With regards to Trenbeath, the Examiner alleges Trenbeath teaches "subscribed clients C, D, E receives [sic] update data, attached data object in update messages from a publishing client A." (Final Office Action, p. 5.) However, the Examiner does not use Trenbeath to disclose, nor does it teach or suggest, at least the above-noted distinguishing features of claims 26, 33, 39, 45, 51, and 57. Therefore, Trenbeath does not cure the deficiencies of Chandra and Stocker.

Thus, as neither Stocker nor Trenbeath cures the deficiencies of Chandra, the applied references cannot be used to establish a prima facie case of obviousness.

Accordingly, Appellants respectfully request reconsideration and withdrawal of the rejection of independent claims 26, 33, 39, 45, 51, and 57, and they be found allowable over the applied references. Also, dependent claims 28, 34, 42-44, 48-50, 54-56, 60-62, 67, and 68 are allowable for at least the same reasons as independent claims 26, 33, 39, 45, 51, and 57 are allowable, and further for their own respective features.

C. Campbell does not cure the deficiencies of Chandra, Stocker, and Trenbeath

The Examiner rejected claims 29-31 and 35-38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chandra in view of Stocker, further in view of Trenbeath, and in further view of Campbell.

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Dependent claims 29-31 and 35-38 are allowable at least because they recite all of the features of independent claims 26 and 33, from which they depend. As discussed above, the combination of Chandra, Stocker, and Trenbeath fails to disclose all of the features of claims 26 and 33.

The Examiner alleges Campbell teaches "causing the node to determine at least one client proxy with which the client communicates; causing the node to route to the client proxy; and causing the client proxy to rout the data to the client to determine the connection," "client information is extracted and replaced with predetermined substitute information at server proxy which is considered as a client proxy," and "wherein the node is configured to determine a connection by determining at least one client proxy with which the registered client communicates and to route the data to the client proxy." (Final Office Action, pp. 30-34). Appellants disagree. However, the Examiner does not use Campbell to disclose, nor does it teach or suggest, at least the above-noted distinguishing features of claims 26 and 33. Therefore, as Campbell does not cure the deficiencies of Chandra, Stocker, and Trenbeath, the applied references cannot be used to establish a prima facie case of obviousness for claims 26 and 33.

Accordingly, at least based on their respective dependency to claim 26 and 33, claims 29-31 and 35-38 should be found allowable over the applied references, as well as for their additional distinguishing features.

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D.   Freeman does not cure the deficiencies of Chandra, Stocker, and Trenbeath

The Examiner rejected claims 40, 41, 46, 47, 52, 53, 58, and 59 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chandra in view of Stocker, further in view of Trenbeath, and in further view of Freeman.

Dependent claims 40, 41, 46, 47, 52, 53, 58, and 59 are allowable at least because they recite all of the features of independent claims 39, 45, 51, and 57, from which they depend. As discussed above, the combination of Chandra, Stocker, and Trenbeath fails to disclose all of the features of claims 39, 45, 51, and 57.

The Examiner alleges Freeman teaches "wherein providing the data representation to the client device includes providing the live object that causes the client device to register with a client proxy of the routing network," "wherein providing the data representation to the client device includes providing the live object that causes the client device to register with the node of the routing network," "wherein the live object of the data representation is configured to cause the client device to register with a client proxy of the routing network," and "wherein the live object of the data representation is configured to cause the client device to register with the node of the routing network." (Final Office Action, on pages 35-38.) Appellants disagree. However, the Examiner does not use Freeman to disclose, nor does it teach or suggest, at least the above-noted distinguishing features of claims 39, 45, 51, and 57. Therefore, as Freeman does not cure the deficiencies of Chandra, Stocker, and Trenbeath, the applied references cannot be used to establish a prima facie case of obviousness for claims 39, 45, 51, and 57.

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Accordingly, at least based on their respective dependency to claim 39, 45, 51, and 57, claims 40, 41, 46, 47, 52, 53, 58, and 59 should be found allowable over the applied references, as well as for their additional distinguishing features.

> ### *E.   Chandra and Stocker do not teach or suggest at least the claimed category of an updated message is identified based on the input source as respectively recited in claims 63, 64, and 66*

The Examiner maintained the rejections of claims 63, 64, and 66 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chandra in view of Stocker. (Final Office Action, pp. 38-44; Advisory p, 2.)

Independent claims 63, 64, and 66 recite features that distinguish over the applied references. For example, independent claim 63 recites, *inter alia*, (emphasis added):

> wherein in response to determining that the client device is registered to receive update data for the live object, *causing a category of the update message to be identified based on the input source*, a node type associated with the category be determined, and the update message be routed from the gateway device to a node having the node type at the routing network, and causing the node to route the update message to the client device.

Further, independent claim 64 recites, *inter alia*, (emphasis added):

> wherein the routing network is configured to *identify a category of the update message based on the input source*, determine a node type associated with the category, and to route the update message from a gateway device at the routing network to a node having the node type at the routing network, and wherein the node is configured to route the update message to the client device if the client device is registered to receive the update data for the live object.

Also, independent claim 66 recites, *inter alia*, (emphasis added):

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> wherein *a category of the update message is identified based on the input source*, a node type associated with the category is determined, and the update message is routed from a gateway device at the routing network to a node having the node type at the routing network, wherein the update message is routed from the node to the client device in response to a determination that the client device is registered to receive the update data for the live object.

The Examiner again relies on Chandra to allegedly teach the above-noted distinguishing features. (Final Office Action, pp. 38-44.) Appellant disagrees for reasons similar to those discussed above. While these claims recite different distinguishing features, i.e., an updated message is identified based on the input source, the reference relied upon by the Office, Chandra, merely teaches using a category/topic of message content. Thus, for similar reasons as discussed above with respect to independent claims 26, 33, 39, 45, 51, and 57, Chandra and Stocker, taken alone or in combination, fail to disclose at least the above-noted distinguishing features of claims 63, 64, and 66. Applicants therefore respectfully request the reconsideration and withdrawal of the rejection of claims 63, 64, and 66 under 35 U.S.C. § 103(a).

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F.   Conclusion

Therefore, as the Office has failed to show the applied references **teach at least the** claimed identifying a category of the update message based on the input source *or* an updated message is identified based on the input source, Appellants respectfully request that the Board reverse the Office's final rejection of claims 26, 28-31, 33-64, and 66-68, and remand this application for allowance of claims 26, 28-31, 33-64, and 66-68.

Respectfully submitted,

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V.   ***Claims Appendix (37 C.F.R. § 41.37(c)(i)(v))***

1-25.   (Cancelled)

26.   A method comprising:

receiving, using a processing device, an update message from an input source, the update message identifying a live object and containing data for updating a property of the live object;

identifying a category of the update message based on the input source;

determining a node having a node type to which the update message is to be routed based on a mapping of categories of update messages to node types, the mapping controlling an amount of update message traffic through nodes of a routing network;

routing, using the processing device, the update message to the node having the determined node type;

causing the node, through the update message, to determine a client, different from the input source, that has registered for updates of the live object;

causing the node to route the update message from the node to the client; and

causing the client to process the update message and to update the property of the live object.

27.   (Cancelled)

28.   The method of claim 26, further comprising:

causing the node to extract an object ID from the update message, to establish a connection with the client, and to determine if the client has registered for updates of the live object based on the object ID.

29.   The method of claim 28, further comprising:

causing the node to determine at least one client proxy with which the client communicates;

causing the node to route the update message to the client proxy; and

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causing the client proxy to route the update message to the client to determine the connection.

30.   The method of claim 29, further comprising causing the node to maintain client registration information concerning the client connection.

31.   The method of claim 29, further comprising causing the node to maintain client registration information concerning the client connection at the client proxy.

32.   (Cancelled)

33.   A routing network comprising:

a gateway device configured to:

receive an update message from an input source, the update message identifying a live object and containing data for updating a property of the live object,

identify a category of the update message based on the input source;

determine a node having a node type to which the update message is to be routed based on a mapping of a categories of update messages to node types, the mapping controlling an amount of update message traffic through nodes of a routing network; and

route the update message; and

the node configured to:

receive the update message from the gateway device, wherein the node is configured to be mapped to the node type,

determine a client, different from the input source, that has registered for updates of the live object, and

route the update message from the node to the client, wherein the client is adapted to process the update message and to update the property of the live object.

34.   The routing network of claim 33, wherein the node is configured to extract an object ID from the update message and to determine a connection to the client to route the data to the client.

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35.   The routing network of claim 34, wherein the node is configured to determine the connection by determining at least one client proxy with which the client communicates and to route the update message to the client proxy.

36.   The routing network of claim 35, wherein client registration information concerning the client connection is configured to be maintained at the node.

37.   The routing network of claim 35, wherein client registration information concerning the client connection is configured to be maintained at the client proxy.

38.   The routing network of claim 33, wherein:

the gateway device is configured to route the update message to the node adapted to receive messages of more than one message category, and

the node is configured to determine a connection with at least one client proxy with which the client communicates and to route the data to the client proxy.

39.   A method comprising:

providing, using a processing device of an input source, a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object recognizable by the client device, and causing the client device to respond to the live object of the data representation by determining an object ID of the live object and to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to a node in the routing network; and

sending, using the processing device of the input source, an update message to the routing network, wherein the update message identifies the live object and contains update data that updates a property of the live object,

wherein a gateway device at the routing network is configured to identify a category of the update message based on the input source, to determine a node type to which the

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identified category maps, and to route the update message to the node, having the node type, at the routing network,

wherein the node is configured to identify the client device as a registered device and to route the update message to the client device, and

wherein the client device processes the update message upon receipt to update the property of the live object at the client device.

40.   The method of claim 39, wherein providing the data representation to the client device includes providing the live object that causes the client device to register with a client proxy of the routing network.

41.   The method of claim 39, wherein providing the data representation to the client device includes providing the live object that causes the client device to register with the node of the routing network.

42.   The method of claim 39, wherein providing the data representation to the client device includes providing an activation module that is executed by the client device and that registers the live object with the routing network.

43.   The method of claim 42, wherein providing the activation module includes providing the activation module that is configured to determine a node type that handles registration and that causes the client device to register with the node corresponding to the node type.

44.   The method of claim 42, wherein providing the activation module includes providing the activation module that is configured to determine a message category of the data representation and that causes the client device to register with a node having a node type corresponding to the message category.

45.   An apparatus comprising:

an input source device configured to provide a data representation to a client device, different from the input source, coupled to a routing network, wherein the data

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representation includes at least one live object that is recognizable by the client device, and that causes the client device to determine an object ID of the live object to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to the routing network,

wherein the input source device is configured to route an update message to the routing network, wherein the update message identifies the live object and contains update data for updating a property of the live object,

wherein a gateway device at the network is configured to identify a category of the update message based on the input source, to determine a node type to which the identified category maps, and to route the update message to a node of the node type at the routing network,

wherein the node is configured to identify the client device as a registered device and route the update message containing the update data to the client device, and

wherein the client device is configured to process the update message upon receipt to update the property of the live object at the client device.

46.   The apparatus of claim 45, wherein the live object of the data representation is configured to cause the client device to register with a client proxy of the routing network.

47.   The apparatus of claim 45, wherein the live object of the data representation is configured to cause the client device to register with the node of the routing network.

48.   The apparatus of claim 45, wherein the received data representation includes an activation module that is configured to be executed by the client device and adapted to register the live object with the routing network.

49.   The apparatus of claim 48, wherein the activation module is configured to determine a node type for handling registration and to cause the client device to register with the node of the node type.

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50.   The apparatus of claim 48, wherein the activation module determines a message category of the data representation and causes the client device to register with the node having a node type corresponding to the message category.

51.   An article of manufacture including a computer-readable storage medium having instructions stored thereon, execution of which by a computing device causes the computing device to perform operations comprising:

       providing, using a processing device of an input source, a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object that is recognizable by the client device, and that causes the client device to respond to the live object by determining an object ID of the live object to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to the routing network; and

       sending, using the processing device of the input source, an update message to the routing network, wherein the update message identifies the live object and contains update data for updating a property of the live object,

       wherein a gateway device at the routing network is configured to identify a category of the update message based on the input source, to determine a node type to which the identified category maps, and to route the update message to a node of the node type at the routing network,

       wherein the node is configured to identify the client device as a registered device and to route the update message to the client device, and

       wherein the client device is configured to process the update message upon receipt to update the property of the live object at the client device.

52.   The article of manufacture of claim 51, wherein the live object of the data representation causes the client device to register with a client proxy of the routing network.

53.   The article of manufacture of claim 51, wherein the live object of the data representation causes the client device to register with the node of the routing network.

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54.   The article of manufacture of claim 51, wherein the received data representation includes an activation module executed by the client device and adapted to register the live object with the routing network.

55.   The article of manufacture of claim 54, wherein the activation module determines a node type that handles registration and causes the client device to register with the node of the node type.

56.   The article of manufacture of claim 54, wherein the activation module determines a message category of the data representation and causes the client device to register with the node having a node type corresponding to the message category.

57.   A non-transitory computer readable storage medium having instructions stored thereon, the instructions comprising:

instructions for providing a data representation to a client device coupled to a routing network, wherein the data representation includes at least one live object recognizable by the client device, and wherein the client device is configured to respond to the live object of the data representation by determining an object ID of the live object to register for updates of the live object with the routing network, such that registering the client device with the routing network provides client connection information to the routing network; and

instructions for providing, using a processing device of an input source, different from the client device, an update message to the routing network, wherein the update message identifies the live object and contains update data for updating a property of the live object,

wherein a gateway device at the routing network is configured to identify a category of the update message based on the input source, to determine a node type to which the identified category maps, and to route the update message to a node of the node type at the routing network,

wherein the node is configured to identify the client device as a registered device and to route the update message containing the update data to the client device, and

wherein the client device is configured to process the update message upon receipt to update the property of the live object at the client device.

58.   The non-transitory computer readable storage medium of claim 57, wherein the live object of the data representation causes the client device to register with a client proxy of the routing network.

59.   The non-transitory computer readable storage medium of claim 57, wherein the live object of the data representation causes the client device to register with the node of the routing network.

60.   The non-transitory computer readable storage medium of claim 57, wherein the data representation includes an activation module that is executed by the client device and that is adapted to register the live object with the routing network.

61.   The non-transitory computer readable storage medium of claim 60, wherein the activation module determines a node type for handling registration and causes the client device to register with the node of the node type.

62.   The non-transitory computer readable storage medium of claim 60, wherein the activation module determines a message category of the data representation and causes the client device to register with the node having the node type corresponding to the message category.

63.   A method comprising:

providing a live object to a client device;

sending, using a processing device of an input source, different from the client device, an update message to a routing network identifying the live object and containing update data to update the live object at the client device,

wherein in response to determining that the client device is registered to receive update data for the live object, causing a category of the update message to be

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identified based on the input source, a node type associated with the category be determined, and the update message be routed from the gateway device to a node having the node type at the routing network, and causing the node to route the update message to the client device.

64.   An apparatus comprising:

an input source arranged to provide a live object to a client device, different from the input source; and

the input source arranged to provide an update message to a routing network identifying the live object and containing update data for updating the live object,

wherein the routing network is configured to identify a category of the update message based on the input source, determine a node type associated with the category, and to route the update message from a gateway device at the routing network to a node having the node type at the routing network, and wherein the node is configured to route the update message to the client device if the client device is registered to receive the update data for the live object.

65.   (Cancelled)

66.   A non-transitory computer readable storage medium having instructions stored thereon, the instructions comprising:

instructions for providing a live object to a client device; and

instructions for providing an update message from an input source, different from the client device, to a routing network identifying the live object and containing update data for updating the live object at the client device,

wherein a category of the update message is identified based on the input source, a node type associated with the category is determined, and the update message is routed from a gateway device at the routing network to a node having the node type at the routing network, wherein the update message is routed from the node to the client device in response to a determination that the client device is registered to receive the update data for the live object.

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67. The routing network of claim 33, wherein the node type is configured to identify the node that receives the update message from the gateway device.

68. The method of claim 26, wherein the property of the live object has a direct effect on a visual representation of the live object in a data representation, has an effect on an internal aspect of the live object and has no effect on the visual representation of the live object in the data representation, or has a direct effect on one aspect of the visual representation of the live object in the data representation and has no effect on other aspect of the visual representation of the live object in the data representation.

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Electronic Patent Application Fee Transmittal

Application Number:	11396251
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Title of Invention:	Asynchronous messaging using a node specialization architecture in the dynamic routing network
First Named Inventor/Applicant Name:	Timothy Tuttle
Filer:	Jason Daniel Eisenberg/Valee Bartels
Attorney Docket Number:	2222.775000E

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Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Filing a brief in support of an appeal	1402	1	620	620
Post-Allowance-and-Post-Issuance:				
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Miscellaneous:				
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First Named Inventor/Applicant Name:	Timothy Tuttle
Customer Number:	26111
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2222_775000E_brief_on_appeal.pdf	4169813 c2f77536c3c03a633ebe30e33bce54d5f7774b78	yes	35

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Miscellaneous Incoming Letter		1	1
Appeal Brief Filed		2	35

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2	Fee Worksheet (SB06)	fee-info.pdf	30051 1a1cf4f21f95c177ec7fba14e26da0b6878a54ec	no	2

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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May 31, 2012

Commissioner for Patents
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Re: U.S. Nonprovisional Patent Application No. 11/396,251; Filed: March 30, 2006
      For: **Asynchronous Messaging Using a Node Specialization Architecture in the Dynamic Routing Network**
      Inventors: TUTTLE *et al.*
      Our Ref: 2222.775000E

Commissioner:

Transmitted herewith for appropriate action are the following documents:

1. Online Credit Card Payment Authorization in the amount of $620.00 to cover Filing a Brief in Support of an Appeal; and

2. Brief on Appeal Under 37 C.F.R. §41.37.

The above-listed documents are filed electronically through EFS-Web.

In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Fee payment is provided through online credit card payment. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

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JDE/A-S/vb
Enclosure(s)

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